extended

attributes

The magazine of the OS/2 community

Phoenix
OS/2
Society

keyphrases

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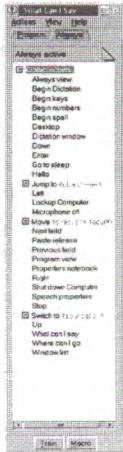
Thanks and a call to action

by Bill Schindler, editor-in-chief

This *extended attributes* is something of an experimental issue. We have a programming article, a crossword puzzle, and two reviews of the same product. Even the cover is an experiment. (More than usual, anyway.)

Let us know what you think, so we can tell if any of these experiments are worth repeating.

Thanks to...

If you're new to the Society, you may not realize that everything is done by volunteers. Management, articles, editing and layout, accounting, program, marketing... literally *everything* is done by volunteers. Their "pay" is our gratitude for taking on and doing the various jobs. So, without further ado, I'd like to thank some of the people who are making my job easier:

A huge "thank you" to Roby Gamboa for volunteering to take on some (if not all) of the database programming work.

Thanks to Mike Briggs for working to keep the Web site up-to-date.

Mike also deserves special credit for inhuman efforts in keeping an OS/2 system set up at the SIG meeting site at KDC.

Thanks to reviews editor Steve Gurnick. Steve stays on top of the often hard chore of giving out, tracking, and getting reviews done.

Thanks also to SIG editor Ernie Fisch for "herding cats" and somehow getting articles out of the SIG leaders before we go to press each month.

Finally, I'd like to especially thank all of our writers for giving us some great articles!

Future issues

Our next issue will target optimizing OS/2. If you have tips, tricks, or an article idea on how to make OS/2 run faster, please send me an email.

The theme of the September issue will be "building an OS/2 system." The focus will be on hardware and how to build an OS/2 system that screams. As always, your tips, tricks, and article ideas are welcome!

A call to action

At the IBM Technical Interchange, a representative of the IBM Speech Business Unit (SBU), David Nahamoo, made a promise to Esther (and via her, to the Phoenix OS/2 Society) that the SBU would get somebody to present to the Society in August. He apparently had no intention of keeping that promise.

He, and other representatives of the SBU, have not responded to email or returned phone calls. If this was an isolated event, it would be annoying. However, the SBU has gone out of its way to ignore OS/2 users and OS/2 software developers.

Therefore, I'm asking you to write to David Nahamoo, nahamoo@watson.ibm.com. Send a copy to Lou Gerstner at www.ibm.com/cgi-bin/email-lvg.pl (you have to use the Web page). Be polite, but express your concern, disgust, and/or anger that an IBM executive is not delivering what was promised. ©

Phoenix OS/2 Society, Inc

The Phoenix OS/2 Society, Inc (POSSI) is an organization of computer users with an interest in IBM's OS/2 operating system.

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Target: market

by Esther Schindler

Among the most common refrains, in online conversation, is the predictable discussion in which IBM's OS/2 marketing is dissected, and from which IBM never emerges unscathed. I thought that it was time to devote a few words to the topic, and attempt to provide a new perspective.

In any subject related to marketing, the first question is: marketing to *whom*? So I'll begin with an overview of the way that prospective customers are segmented.

What IBM understands

By initial appearances, IBM has focused its marketing energies entirely on the corporate computer user. IBM refers to these as "the global 2,000."

Those two thousand customers are responsible for the majority of IBM's business. Not just for the business of the folks responsible for OS/2, the Personal Software Products division (IBM PSP), but for the company as a whole; the global 2,000 buys mainframes, minicomputers, network hardware, software services, personal computers, hard disks, and components I haven't thought of yet. That's a significant chunk of change, and selling OS/2 to them is just one component of what IBM considers when it thinks about "serving the customer."

IBM knows how to sell to these people. IBM staff know how to get the company's Chief Information Officer to sign on the dotted line. Establishing corporate relationships is something that IBM has done well for decades—and the people who have reached the top ranks of IBM are, to a marked degree, the sales people who were especially successful and comfortable with that model of business.

So when IBM CEO Lou Gerstner made his comments, nearly two years ago, committing the company's resource to serving those corporate customers, he had his eye on the bread-and-butter of the company's income producers. This is no surprise. We'd be silly to imagine

that IBM would ever abandon that marketplace.

However, the Phoenix OS/2 Society is composed mostly of individual OS/2 users. Few of us are corporate users, and fewer still work for the global 2,000. We're less interested in IBM's relationship with its corporate customers than in its intentions for *us*.

Before I address that issue, however, wrap your mind around that IBM mindset. In contemplating how IBM looks at things (or how they can be convinced to look at things), empathize with the world that they know. They aren't familiar with your perspective, and they're unlikely to learn. Approach the issues from their point of view.

What users want

OS/2 enthusiasts, predictably enough, want OS/2 used everywhere. In our enthusiasm (some might say fanaticism), we sometimes make it seem as we want *only* OS/2 used everywhere, but what I think that's a minority attitude. Most of us are campaigning for software choice as much as we are for our personal favorite.

IBM can justly be accused of marketing with too narrow a scope. The enthusiasts, however, are equally in error for thinking too broadly.

One reason for this is the misleading nature of marketing terms. The term *SOHO*, for small-office-home-office, is used as if it describes all computer users not employed by a big corporation. The word SOHO is deceptive, because it classifies too many kinds of users into one category, and leaves out many important distinctions. People refer to SOHO as a synonym for "home user," when in fact they are quite different.

The consumer market is largely home computer users, which might include office workers that bring a report home to work on. The "home user" purchases games and other applications that only apply to household maintenance, such as landscape design programs and

deck-building advice. Home-based businesses are often lumped into this category, but they have different needs; if nothing else, a hard disk crash is significantly more devastating.

Most of United States businesses are in small business, which starts at one person and, depending on whom you ask, ranges up to 100, 200, 500 employees. Small business users have a similar but different set of needs from the home office user; they have more in common, though, than do home computer users and home-office users. Beyond small business is the large corporate market, which we've already examined.

That's the standard breakdown. However, in regard to marketing computer products, it helps to examine some of those categories with another twist of the microscope dial.

For instance, Forrester Research breaks down the home market into traditionalists (who are unlikely to buy computers) and neo-hearthminders. Neo-hearthminders include techno-strivers, gadget grabbers, cyber-snobs, and mouse potatoes. Presumably we have representatives of each of these in our user group!

OS/2 at home

You might be a home user of OS/2, but there's a pretty good chance that you're a technically literate one. That's not the case for most home PC users, such as families that buy a Packard-Bell at Best Buy on the spur on the moment, justifying it "because it would be good for the kids." The home market includes you—but it includes many more of *them*.

Do you really expect IBM to market OS/2 to the user set who doesn't know that "D:" is the name of the CD-ROM drive, or how to download a file from a Web site? Certainly not with OS/2 Warp's current installa-

⇨

tion paradigms, which require that you understand that "I want Internet!" means "Install TCP/IP."

IBM's support structure was never built to cope with home users. The support lines aren't open during the hours home users need to call. The support structure expects that a caller has a network administrator to call upon, or at least someone with significant computer training. They're unprepared to deal with the Packard-Bell set, who is apt to ask why the floor pedal doesn't work right. (Oh... it's called a *mouse?*)

Reaching the home user market requires that a lot of marketing money be poured into broad TV advertising campaigns that must reach everyone possible. IBM has no experience in this (I've spoken with people at their advertising agency, Ogilvy & Mather, who concur), so they wasted a lot of money.

The big corporations who pay IBM's bills don't care about advertising. Their marketing awareness is built on technical information provided by the local IBM representative. IBM knows the art of the schmooze incredibly well, and they're the commensurate sales representatives.

That skill doesn't help IBM at all in the consumer marketplace, which is why IBM faltered in advertising and marketing OS/2 Warp 3. They spent an ungodly amount of money and gained a whole 4% in market share. That's not enough to justify the resources they devoted to it. In my opinion, IBM would have done better to ask, "How can we spend less money, wisely, and not drop the idea completely?" but they didn't ask me. They were uncomfortable trying to communicate with that marketplace to begin with, like a teenage boy stuck into an itchy, uncomfortable suit. I think they were happy to find an excuse *not* to follow through in that regard, simply because the environment is so alien to them.

Small and medium enterprise

That might sound as if I believe that IBM should limit itself to the large corporate market. That's not so.

As I mentioned briefly last month in *extended attributes*, in Paul Giangarra's Technical Interchange pre-sentation, he said, "IBM's focus with OS/2 is for business. Big, small, it doesn't matter." Later that day, IBM's John Soyring told me, "We look first at our business clients. We're happy if the product is appreciated by others, and we'll certainly take their money, but we're looking only at businesses."

The largest segment of the market is small business. That's where I think that OS/2 Warp has its biggest opportunity—and where IBM has to focus its energies if the operating system is to survive.

The small and medium enterprise market (SME) is important for several reasons.

SME is large enough to justify the development of drivers, utilities, etc. The big corporations require these, but cannot provide them on their own. The SME provides a large enough market for hardware companies to justify the creation of device drivers; the global 2,000, alone, does not.

One example is the situation with Creative Labs. The company (which "owns" most of the multimedia market) announced that it would support the current crop of SoundBlaster multimedia cards, but would no longer write new OS/2 drivers.

Keep this in mind: the global 2,000 doesn't buy multimedia cards. Their environments are the proving ground of Dilbert cartoons, and multimedia sounds in the office are considered frivolous, not to mention distracting. (That's why speech recognition hasn't made it in corporate circles, and why IBM is now—wrongly—relegating it to "consumer product" status.)

Hundreds of OS/2 users wrote to Lou Gerstner to complain about Creative Labs' decision, but none of us have seen any obvious result. One IBM PSP executive to whom I spoke was confused that I cared so much. Just buy a different brand of card; oh, does Creative Labs really have that significant a percentage of its market? Well, multimedia cards are for games, right? And the game market isn't one that IBM chooses to address with OS/2. So what's the problem?

The problem is that the Global 2,000 does depend on multimedia—just in smaller doses. Telephony applications such as voice mail require the high end of the multimedia market. If the dominant vendor doesn't support them, the corporate-specific application can't exist.

The SME market, however, has multimedia cards installed at the office. They might not permit employees to play Doom, but system sounds and screen savers are fine. Multimedia presentation software is common.

SME buys off the shelf applications. Corporations are apt to build their own. The global 2,000 market isn't big enough to support the independent software vendors who build those applications. Yet the corporations do depend on the existence of those tools when they seem appropriate, whether it's a utility (like tape backup) or a desktop application.

Success in the SME builds mind share. Corporate executives want to purchase what's "accepted," if not what's hyped, and nobody likes to hear, "You chose OS/2? What's that?" As more OS/2 software vendors write applications for the SME (such as small business accounting, desktop publishing, and other business tools), those applications also get reviewed by the computer press. The market awareness grows, for big customers and small ones. The size of the pond grows, bit by bit.

Little companies grow into big companies. If IBM courts the SME marketplace now, as they grow they'll stick with the vendors they know. The fact that IBM hasn't been paying attention to this seemingly obvious item is a market opportunity that Microsoft has not ignored.

Supporting the SME grows power users. The power user is the person at your office who always seems to know the answer. Power users love technology for its own sake, and they're usually given the freedom to explore it, for the benefit of the company. They play with new software at home. They're the people to whom managers turn for advice; a power user's recommendation can make a significant difference in a company's technical direction—though these people are often "geeks" who would never be trotted out when the IBM sales executive comes to visit. Power users are the people who tell their brother-in-law, "Oh, don't implement that prod-

uct—it stinks," quietly and invisibly losing the sale for the company representative who visits the brother-in-law at his global 2,000 office the next day.

Every computer company wants the power user on its side. Your best evidence is the enthusiasm with which software companies court user groups. What else do you think we are?

Smaller companies don't have their own help desks, network administrators, or development departments, but **they depend on technology knowledgeable companies** who are (or can be) IBM partners. They include consultants and value added resellers, such as those who belong to BESTeam. The global 2,000 isn't enough of a marketplace to support the 6,000+ members of BESTeam. The SME is its territory. IBM barely notices a 200-person company; it's under its radar. But a 200-person company is a great client for any computer consultant. So is a 20-person company.

IBM has never learned to help its partners exploit the IBM product weaknesses. Novell Netware was always expensive and difficult to implement. Rather than try to court businesses itself, Novell wisely created the CNE program, so that its partners could become rich by

installing the network system. The old adage is, "If you can't fix it, flaunt it." OS/2 is a perfect opportunity to court value added resellers and consultants, and to let those people serve the market outside IBM's global 2,000 focus. (From where do you think those technical experts come? The power users!)

The SME marketplace makes the OS/2 home user market possible. Creative Labs does sell a lot of multimedia cards to the game players that IBM disdains. But if they provide drivers for SME, those same drivers become available for the home user. If the multimedia drivers exist, then OS/2 software vendors can write OS/2 games, and encylopedia programs, and cooking applications.

Opening the aperture

In the last several months, I've had many conversations with IBM executives about this topic. When I point out that the OS/2 marketplace felt that IBM cared only about the global 2,000, they replied, "But that's not what we meant!" Intended or not, that's the message that many of us heard, and IBM has to work hard to convince us otherwise.

As a result, you'll start seeing some attitude changes at IBM. Expect them slowly; IBM doesn't

know how to change direction swiftly (which is a significant weakness, but one we'll tackle another time). But it's happening.

IBM is slowly changing its message so that the big-corporate focus does not *exclude* others from using or recommending the technology. Focus, after all, just means where you shine the spotlight. It doesn't mean that the rest of the stage is dark. IBM will be gradually opening the aperture on the spotlight's lens, so that its message encompasses more of us.

We have a few examples already. IBM is firmly supporting IOTTA, the International OS/2 Technology Trade Association (which was a happy outgrowth of the OS/2 Marketplace we co-sponsored here in March). IBM is putting a lot of resources behind BESTeam, which is intended to support the resellers who deal with the SME. In the week before I wrote this article, top IBM executives met with several Indelible Blue customers (many of whom were in the SME category) to listen to their concerns.

How else do you think IBM can open the aperture? Write to me at esther@bitranch.com, and let me know. ◉

Stardock Announces OS/2 Essentials Version 2

Stardock Systems announced OS/2 Essentials Version 2. OS/2 Essentials has long been Stardock's primary utility suite for OS/2. Where Object Desktop supplies system and desktop enhancements, OS/2 Essentials provides additional utilities that most users will find useful.

Version 2 is the first major update to the suite since July of 1995. Every OS/2 Essentials components has been updated, with the exception of the Havoc arcade game and the File-Bar window manager. These products have been removed from the new edition and replaced with SDS Benchmark 1.0.

The utilities in OS/2 Essentials Version 2 now include:

FileGraph/PM. Visually graph where disk space is being used.

Screen Saver Professional. A powerful screen saver with security, green monitor support, and multimedia features.

DirMaster Professional. DirMaster is a file manager with a dual drive view (similar to Norton Commander) and is multithreaded for exceptional performance.

SDS Benchmark 1.0. Unlike other benchmarks, SDS Benchmark is very easy to use and quickly provides results on system performance. Video, CPU, memory, and drive speed are measured, rated, and reported.

WPS Trashcan Professional. OS/2's WorkPlace Shell is a natural environment for a true trashcan, which OS/2 Essentials now provides.

Stardock always planned to utilize CD-ROM distribution for maximum convenience. However, rather than let the extra room on the CD go to waste, Stardock has added a compilation of OS/2 FixPaks, updates to Java and VisualAge, and a host of the top freeware, demos, and shareware programs that are available for OS/2. A complete listing of what's included can be found on Stardock's Web site at www.stardock.com/oe20.html.

OS/2 Essentials Version 2 has a list price of $49.95. Current users of OS/2 Essentials 1.x can purchase the upgrade version for $19.95. ◉

Hiding REXX programs

by Robert Mahoney

Robert Mahoney is the author of SpellGuard, an as-you-type spell checker for OS/2. It was recently nominated for "Best Word Processing tool" in the 1997 Shareware Industry Awards.

Perhaps you're a programmer who doesn't want to to give away the source to your program. Or you don't want to give your users the ability to modify your procedures. Or you have wished you could distribute your REXX programs without giving away the source code.

In this article, I cover three different methods of hiding your REXX program in an EXE. With any of these methods, you can feel free to write and distribute REXX procedures to your heart's content, without fear of modification. Only one of these methods is a truly foolproof barrier to a determined person, but we will see that it has its drawbacks as well.

RexxStart

An EXE uses the RexxStart API to call a REXX procedure. The RexxStart API is a very flexible and complex API (and could take up an entire article itself) so we will only look at the parameters that concern us in this article. (See figure 1.)

```
RexxStart (ArgCount, // number of args
   ArgList,       // rexx program args
   ProgramName,   // name of the rexx
                  // procedure
   Instore,       // parameter for in memory
                  // calls
   EnvName,       // the ADDRESS env name
   CallType,      // type of REXX call
   Exits,         // REXX exits
   ReturnCode,    // the return code from
                  // the procedure
   Result)        // the result string
```
Figure 1. RexxStart

REXX expects its strings to be in a certain format, called RXSTRING. An RXSTRING is a structure that contains the string length and a pointer to the string. The toolkit provides macros to manipulate RXSTRINGs (see REXXSAA.H). One example is MAKERXSTRING, which takes a pointer to a string and fills in the passed RXSTRING structure.

```
DosGetResource(hmod; // module handle */
   idType; // resource type
   idName; // resource ID
   ppb;    // returned address of the
           // resource
```
Figure 2. DosGetResource

The first two parameters are pretty obvious. ArgCount is a ULONG that contains the number of arguments passed to the REXX procedure. ArgList is a pointer to an array of RXSTRINGs that contain the actual arguments.

ProgramName (a pointer to a string) and Instore (an array of two RXSTRINGs) are also linked. Depending on how they are filled in, you can execute a REXX program from disk, from memory or from already tokenized REXX source.

The other parameters aren't related to the scope of this article, so I leave their investigation as an exercise for the reader. Instead, let's look at another way to embed a REXX program in an EXE.

Using Resources

Resources are a way for OS/2 to provide a way to store any kind of data in an EXE. Most people are familiar with the most common types of resources: dialogs, icons, and bitmaps. But those are only three of the 22 pre-defined resources OS/2 provides. Resources can also be user defined. A resource type can have any value between RT_MAX and 65535 and can be any kind of data. Now consider the name of this article; you can guess what I have in mind.

To use the resource compiler to compile a user defined resource into a RES file the input file must look like this:

```
RESOURCE 117 1 mydata.dat
```

Where 117 is the resource type and 1 is the ID of the resource.

After the resource file has been added to the EXE, DosGetResource is used to read it. (See figure 2.)

A closer look at the INSTORE parameter is now important, as we revisit the RexxStart API. Since we are using an in-memory copy of the REXX source, the value in the ProgramName parameter will be returned if the REXX program calls the PARSE SOURCE instruction. As stated before, the INSTORE parameter is an array of two RXSTRINGs. To execute an in memory copy of a REXX procedure, INSTORE[0] must point to a character buffer containing that source.

Putting it together, a program that uses resources to hide your REXX program would look something like figure 3.

If you followed what I just did and tried it for yourself, you would find that the REXX program doesn't run. That's because RexxStart requires that each line of a REXX procedure be terminated with either the REXX line termination character, the semicolon (;), or a carriage

```
PVOID pvOffset=NULL;
char *pChar=NULL;
RXSTRING INSTORE[2];
RXSTRING rxargv;
ULONG ulArgCount;
/* retrieve the resource */
rc = DosGetResource(NULLHANDLE,117,1,&pvOffset) ;
/* setup the instore parameter */
pChar=(CHAR *)pvOffset;
INSTORE[0].strptr=pChar;
INSTORE[0].strlength=ulSize;
INSTORE[1].strptr=NULL;
INSTORE[1].strlength=0;
rc = RexxStart((ulArgCount,
               &rxargv,
               (PSZ)"A_TEST.CMD",
               (PRXSTRING)INSTORE,
               (PSZ)"CMD",
               (LONG)RXCOMMAND,
               (PRXSYSEXIT)0,
               (SHORT*)&ReturnCode,
               (PRXSTRING)&retstr);
```
Figure 3. Using resources to hide a REXX program

```
DosGetInfoBlocks(&tib, &pib);
// point to true argument string
trueargs = pib-pib_pchcmd;
while (*trueargs++); //skip program name
trueargs++;
rxargv.strptr = (PCHAR)strdup(trueargs);
rxargv.strlength = strlen(rxargv.strptr);
```

Figure 4. Getting the command line

```
rc = RexxAddMacro(name, //function name
    file, //REXX source file
    RXMACRO_SEARCH_BEFORE); // search order
```

Figure 5. RexxAddMacro

```
rc = RexxSaveMacroSpace(count, // number
                                // of macros
    macrolist, //list of macros
    file); // file name to save to

rc = RexxLoadMacroSpace(count, // number
                                // of macros
    macrolist, // list of macros
    file); // file to load from
```

Figure 6. Saving and loading macro spaces

return and line feed. So to get around this, I use a small REXX program to pre-process the target REXX program and put a semicolon at the end of each line.

Another thing to watch for is the arguments passed on the EXE command line. The C runtime can do funny things to it so you have to retrieve the actual arguments with DosGetInfoBlocks. (See figure 4.)

Using extended attributes

Another way to store the REXX source in the EXE is to use extended attributes. Any discussion of reading and writing extended attributes is beyond the scope of this article. But I have provided the source to the extended attributes method at my Web site, www.netusa.net /~rmahoney.

The source includes some great routines to read and write EAs, so even if you are not interested in RexxStart, it may be worth your while to pick it up.

Again, the concept is similar to the previous method. Write the the REXX source to an extended attribute attached to the EXE, and have the EXE query the extended attribute and execute the REXX source with RexxStart.

Rexx Macrospace

Both of the previous methods have the drawback of storing the REXX source in the EXE. If you used the first method, your source could be examined if someone uses a resource file decompiler on your EXE. With the second method the only thing needed is an EA browser. While you can make it more difficult by first encrypting the source, the third way of storing the REXX program in your EXE doesn't contain readable REXX at all.

Before the REXX interpreter executes your procedure, it compiles it into a tokenized image. It then stores it in the REXX program's EAs and uses that to execute the procedure. We can create our own tokenized image with the RexxAddMacro API. (See figure 5.)

After the procedure is loaded into the REXX Macrospace, it can be stored to disk and re-loaded with the following APIs:

Back to the RexxStart API. If the second RXSTRING in the INSTORE array contains a tokenized image, it will execute that image. Note that this is only valid for tokenized images created on the same version of the REXX interpreter. While the default REXX interpreter has not changed (at least on v2.11,v3.0 and v4.0), OS/2 Warp 4 has introduced ObjectREXX which is a completely

new REXX interpreter. A tokenized image created on the default REXX interpreter will not execute on Object REXX, and vice versa. But RexxSaveMacroSpace does not only create a tokenized image, it also includes other data. So you cannot directly pass the information written to disk by RexxSaveMacroSpace to the RexxStart API. (See figure 6.)

The first thing the third method would have to do is pre-process the REXX program by doing a RexxAddMacro, RexxSaveMacroSpace, and run the resource compiler to add the compiled image to the EXE (or you could use the EA method). The EXE would retrieve the tokenized image, but because REXX does not allow you to add an already tokenized image to the macrospace, you must write the tokenized image to a file, load that file into the macrospace with RexxLoadMacroSpace, and call RexxStart with both INSTORE parameters set to NULL.

Three choices!

Now you have not just one way of hiding your REXX source but three. Which one you choose will depend on your requirements. ◑

Acrobat Reader 3.0 for OS/2 now available

Adobe has shipped Acrobat Reader 3.0 for OS/2. This product is available in seven languages: English, German, French, Italian, Spanish, Dutch, and Swedish. You can find the OS/2 reader (and other platform versions) by pointing your Web Browser to www.adobe.com/prod-index /acrobat/readstep.html

The Acrobat Reader 3.0 for OS/2 includes key Acrobat features such as

internet browser integration, including ability to download Acrobat documents a page at a time from the Web and view them in the Netscape Navigator browser. It also includes Acrobat forms, which enables users to easily read and fill out high quality Acrobat forms on the Web.

The OS/2 version of Acrobat Reader also includes Workplace Shell integration features such as

drag and drop printing, dragging files to the Reader to open, as well as customizable menu fonts. The OS/2 reader supports multiple independent reader windows, and can be launched locally or from the network via command-line.

Acrobat requires OS/2 Warp 3.0 or later. versions of OS/2. For printing on Warp 3, Fixpak 26 or later is recommended. ◑

How OS/2 allocates memory

by Ron Higgen

Some people have asked about OS/2's apparent appetite for memory. To explain what's happening, I need a few minutes of your time to provide some necessary background information. If you have the patience to go through my mini-tutorial, I think it will relieve your concerns.

Unlike DOS (with or without Windows) OS/2 is a *virtual* rather than *real* memory operating system. In many ways OS/2's memory management functions are as complex as multimillion dollar IBM mainframe operating systems such as MVS and VM/370.

Real and virtual memory

Virtual memory systems manage *real* memory (or RAM, in PC jargon) as a global system resource rather than on an application by application basis. Normal (OS/2, DOS, and WinOS2) applications, and indeed most integrated OS/2 functions such as the Workplace Shell, do not actually "see" real memory. The memory they "see" is referred to as *virtual memory*.

Both real and virtual memory is managed in small (4K) blocks called pages. A page of real memory is often referred to as a *page frame*, whereas a virtual memory page is usually referred to as simply a *page*.

The operating system creates and manipulates internal memory management tables. These tables associate a (virtual) page with the (real) frame that "backs" it. A (virtual) page may reside in one of two places:
1. A real page frame (that is, in RAM)
2. The SWAPPER.DAT file on your hard drive

Now for the real magic of virtual storage: not all pages need to be have a real (RAM) page associated with them. How is this possible?

Programs, and the data used by those programs, that comprise both applications and most OS/2 functions reside in virtual storage pages. Almost all applications, and OS/2 itself, consists of hundreds if not thousands of individual program modules. Each module is designed to perform some specific function and is therefore executed (and the data it

operates on accessed) only when the function it represents is requested. For this reason a relatively small number of the program modules residing in virtual memory are actually executed. This is also true of the data those programs access.

When the CPU attempts to access a page, it uses the page's virtual address as kind of an index to the virtual memory tables associated with the currently executing session (virtual machine in OS/2 terms). The lookup will end in one of two ways:
1. The real memory (RAM) address associated with the (virtual) page address will be located.
2. A hardware signal called a *program exception* will interrupt the CPU (and hence the executing thread).

In the first case, program execution continues as though the lookup never occurred. The program "thinks" it is executing an instruction, or accessing data, at location "x" in real memory (RAM) when in fact it is actually referencing a totally different address in real memory.

In the second case, the CPU will automatically start executing an OS/2-provided exception handling function. That function, in turn, gives control to the OS/2 memory management function to resolve the problem, which is often referred to as a *page fault*. To understand OS/2's handling of real memory it is necessary to learn a bit about page fault resolution.

Understanding page faults

Each time a real memory page frame is accessed (through OS/2's managed virtual memory lookup tables), the hardware automatically sets an indicator for that frame that tells OS/2 the frame has been referenced. Likewise each time a frame is updated (that is, an instruction is accessed that updates the page frame contents), the hardware sets another indicator for that frame that tells OS/2 the frame contents have been changed.

These reference and change indicators allow OS/2 to efficiently manage the real storage resource on a global (system wide) basis.

When a page fault occurs, the event is, in effect, telling OS/2 that no real storage (RAM) is assigned to the virtual address being referenced. OS/2 resolves this problem in one of two ways:
1. Assign an unused frame to "back" the virtual page.
2. Steal a frame backing some other virtual page and use it to "back" the virtual page currently being accessed.

The first case is a "no brainer." As long as unused RAM exists, OS/2 will quite happily assign it to the interrupted process. *This is why memory monitors show the storage utilization as being very high immediately after OS/2 is booted.* OS/2's initialization process accesses large quantities of virtual storage to hold the programs that actually get the operating system going. A high percentage of these programs are indeed executed, resulting in large quantities of RAM being needed for "backing" the virtual storage.

The second case is much more complex. In this case, OS/2 needs to find a frame to steal. It would not be very efficient if OS/2 were to steal a frame that needed to be accessed very soon after the current fault was resolved. To avoid such "thrashing," the operating system looks for a frame that has not been accessed for the longest period of time; this is called the "least recently used" (LRU) rule.

A frame that has neither the "changed" nor the "referenced" indicator set on, can be immediately assigned to the interrupted process without having to write its contents to the swap file. A frame that has been referenced but not changed can be immediately stolen, if its contents have been previously written to the swap file. A frame with both the referenced and changed indicators set on must always be written to the swap file before it can be stolen; therefore, it has the lowest priority on the totem pole for resolving page faults.

OS/2 searches for a frame that represents the least amount of work (overhead) to resolve the page fault.

Clearly the least amount of work is in the first case, where an unused frame is available to satisfy the request. For this reason, OS/2 periodically rearranges memory, automatically stealing frames that have not been used for a relatively long time. Thus the system can maintain a pool of unused frames, simply by adding the stolen pages (now written to the swap file) to the list of available (unused) real storage (RAM) pages. *This is why OS/2 memory usage is so unpredictable when viewed from a memory monitor.*

Using a memory monitor

So what good is a memory monitor?

A memory monitor, depending on monitor implementation, gives you an instantaneous, or averaged, view of the number of real page frames (times 4 to get kilobytes, or KB) assigned to an OS/2 process or session. With a sufficient number of samples, the resulting data can be used to determine the amount of storage *actively* being used by a process or application session. This is called the *working set* (of pages) for the application.

The working set for a given application depends not only on the application itself, but also on which functions offered by the application are being actively utilized. *This is why it is not all that easy to determine how much real storage an OS/2 application needs to run.*

Thanks for making it this far!

If you've made it to this point in my tutorial, I commend your tenacity. I apologize if I've offended the more technical users reading this who probably already know how virtual storage systems work. I simply do not know how to adequately explain OS/2's behavior with respect to RAM usage without at least peeking under the covers. 🖱

puzzled
An OS/2 crossword puzzle

by Esther Schindler and Bill Schindler

Across

1. List of items from which you can make a selection
4. Holds a print job
8. Where data is placed from cut/copy
9. Graphical representation of an object
10. Application programming interface

The solution is on page 17.

13. One way to run more than a single operating system
14. Something that you work with to perform a task
16. Extended attributes
17. Bulletin board system
19. Part of an operating system that performs basic functions
20. Big ____
22. A typeface
23. An object you drag to create another instance of the original

24. Depress and release mouse button
26. Virtual DOS machine
27. Created when you use "|" on a command line
28. Appearance of the contents of an open object

Down

1. Concurrent performance or interleaved execution of two or more tasks.
2. OS/2 versions 3 and above
3. Object that holds other objects
5. Two or more computers connected for sharing resources
6. Use this to find out what IRQs are used
7. Use this program to find out what processes are running
9. A computer network that spans the globe
10. Adobe Type Manager
11. Disk read optically by means of a laser
12. Object-oriented graphical user interface
15. Representation of an image by an array of bits
18. Unit of memory that represents a character
21. Storage buffer containing frequently accessed storage and data
23. Protocol used to transfer files on the Internet
24. Facility for configuration, installation, and distribution
25. Arrange side by side, top to bottom 🖱

Shop until you drag and drop

by Lee Baldwin

Last month, I mentioned that I was looking for a new job. Before *extended attributes* went to press, I found one. I took a job working on the mainframe; one advantage is that no travel is involved. As a result I attended the LAN SIG on the first Tuesday of June. I'll continue to get to as many of Phoenix OS/2 Society functions as I can.

The disadvantage to my new job is that I still don't have a computer at work to work on. This led me to start researching a laptop purchase. I thought that a laptop would be a lot easier to carry to and from work than a comparably priced full size tower unit with a 15 inch monitor!

Let's go shopping!

My first sojourn was to Computer Renaissance, a chain of stores that sells recycled (used) computers. The salesman there, a Macintosh person, didn't know which of the laptops would run OS/2, but he was enthusiastic about OS/2 as the alternative. He found me the phone numbers for the companies of the laptops he had in stock.

(I guess I have to respect someone who has chosen another operating system, even if it is Macintosh. Mac people are like ourselves; they stand up and say, "I use this because I have tried the others, and this is the best!")

My next stop was CompUSA. When I found a salesman in the laptop area, I accosted him with my requirement for a laptop computer that is OS/2 Warp 4 compliant. For whatever reason, I was much less forgiving of the fact that he didn't have a clue which machines were compliant. I have to say that I gave him a bad time—did I ever enjoy that!

The CompUSA salesman did give me the phone number for Toshiba. I got a sales representative on the phone at Toshiba, and asked him about OS/2 pre-loads (what fun!) and which machines could run OS/2. He had to call his technical support department to find out. Shortly he came back with the fact that their laptops would support OS/2 and also referred me to their web page, where it also says that they support OS/2.

While I was on the Internet I went over to Hitachi, another maker of laptops, where it stated that they don't support OS/2. I briefly thought about sending in an RFP (Request for Proposal) to Hitachi for 1,000 laptops with OS/2 Warp 4 preloaded, to see what would happen. After all, manufacturers go where the money is.

Enjoying the search

All in all, so far this search for a laptop has been a lot of fun. I am eventually going to buy a laptop that will do what I want.

In the meantime remember the Golden Rule: "He who has the gold makes the rules!" In this case, I have the money and I don't *have* to have a laptop. Therefore, they have to satisfy me with their product.

Feel free to drop me a line about your shopping experiences, whether or not you had to harass a manufacturer. The best place to find me is from the link at www.possi.org.

(Yes, I do know that Indelible Blue sells preloaded laptops. I haven't gotten there yet.) ◉

Stardock releases PlusPak: PMINews for OS/2

Stardock Systems released the second product in its PlusPak series, Plus-Pak: PMINews. This newsreader application is the result of several months of close collaboration between Stardock and SouthSoft.

It contains many features designed to appeal to both the casual Internet user and usenet news junkies. Some of the features include:

Multiple Server Support. Multiple news servers are integrated into a single master list of newsgroups.

Multiple GroupLists. Users can have different sets of newsgroups in each GroupList. Each GroupList can contain its own settings, including different email addresses, signatures, and custom filters.

Advanced Filtering and Searching. With only a few mouse clicks, users can filter out users or entire threads they do not wish to not see again. Search features allow users to search

any portion of a post or newsgroup. PlusPak:PMINews filters can help weed out SPAM.

Offline support. PlusPak: PMINews includes extensive off-line support to minimize your time online and maximize your newsgroup viewing experience. Mark messages or threads, and let PlusPak: PMINews download them to view at your leisure. You can even create filters to automatically download messages that are of interest to you!

Spell Checking. The spell checking features of PlusPak: PMINews has a dynamic dictionary which is highly configurable. The more you use it, the better the spelling checker will be at correcting your mistakes.

PM Mail integration. Because PlusPak: PMINews was developed by SouthSoft, it integrates seamlessly with PMMail. If both applications are installed in the same directory,

address books and drag-and-drop capabilities can be shared.

Binary news group handling. Users who download images, shareware, sounds, and other binary files from Internet newsgroups will find that binary posts are treated as actual files. These files can be dragged and dropped to the desktop or manipulated right from the post itself. Plus-Pak: PMINews also handles multiple-part binary postings.

PlusPak:PMINews is available from Stardock's on-line commerce server at www.stardock.com. Plus-Pak: PMINews lists for $34.95, or $29.95 if purchased from the commerce server. Or you can order by phone at 1-888-STARDOCK or 313-762-0687. PlusPak: PMINews will soon be available via Stardock's reseller network, along with other PlusPak products. ◉

A close look at video with ELSA

In all the time we spend looking at our OS/2 systems, all too often we forget about the hardware that makes it possible. The July general meeting of the Phoenix OS/2 Society, on Tuesday July 8, will focus on video hardware: how it works, and how to choose the right video card for you. Our guest will be Avi Singh, product marketing manager from ELSA.

You might not have heard of ELSA video cards before, but it's a sure bet that, if you have, you also heard that their OS/2 support is nothing short of superb. ELSA makes home and office graphics accelerators, including:
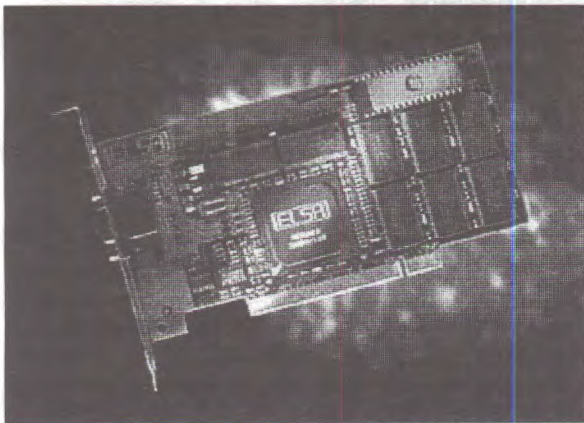
O WINNER 2000AVI/3D: High-end Windows graphics with 2D, 3D, and video acceleration
O ELSA VICTORY 3D: 2D and 3D accelerator for games and office applications

Their graphics accelerators for professional CAD and desktop publishing include:

O GLoria-M and GLoria-L: High-end 3D accelerators for professionals
O GLoria-S: Entering the GLoria class at a reasonable price
O GLoria-4/-8: The classic GLoria series
O WINNER 3000: The new CAD board family with 3D acceleration
O WINNER 2000PRO/X-8: The award-winning CAD classic with 8 MB

ELSA offers outstanding OS/2 performance at a great price/performance ratio. All their graphics boards are optimized for speed, high resolutions, and driver stability

under OS/2. This has been confirmed by many recommendations from computer magazines.

Developed by ELSA engineers, their high-performance OS/2 drivers are able to adapt the timing of their graphics boards exactly to your monitor. This means that you always get the best possible combination of graphics board and monitor.

More than 16 million brilliant colors, refresh rates up to 160 Hz, and almost any resolution (only limited by the display memory) make working under OS/2 more fun than you ever imagined. Modern multimedia applications especially take advantage of the built-in video acceleration of ELSA's graphics boards.

Of course, the company's OS/2 drivers support Seamless Windows and EnDive, thus making full use of the capabilities of your modern 32-bit operating system.

For OS/2, ELSA recommends:
O WINNER 2000AVI/3D
O WINNER 1000/T2D
O WINNER 3000
O WINNER 2000PRO/X-8
The ELSA WINNER 3000 graphics board lets you operate OS/2 with a graphics display area covering three separate monitors. This is a worldwide first for the OS/2 operating system, and is available exclusively from the graphics specialists ELSA.

Presumably, Avi will give us a look at most of their graphic card options. It should be a sight to see!

Why video is so important

Presumably, you're already intending to come to this meeting because you hope ELSA will bring along some cool door prizes. However, video is an essential topic for OS/2 users to understand for other reasons.

In OS/2, device drivers are integrated with core operating system functions (called "ring zero" in technical terms). IBM did this primarily for performance reasons, so that video and other device drivers could operate as fast as possible. They succeeded; that was amply demonstrated by Microsoft, in fact, when they moved device drivers back into ring zero in Windows NT 4.0 after rather smugly *not* doing so in NT 3.x.

The disadvantage to loading device drivers into ring zero is that a failure in the device driver can crash the system. So a top quality driver isn't just "nice to have," it's a requirement to keep your computer running.

The video card can also affect the overall performance of your system. A slow video card can make your system feel slow, even if the rest of the machine is blazing fast.

When and where

The general meeting will be held at 7:00pm on Tuesday, July 8, at the Mountain Preserve Reception Center (1431 E Dunlap). The Q&A session begins at 6:30pm; we're certain to convene at Coyote Springs afterwards.

Coming up

We had originally scheduled the August meeting for a presentation by the research division of the IBM Speech Business Unit. Apparently, the Phoenix OS/2 Society is more intimidating than any of us realized; in fear that the meeting would become a lynching, the responsible parties at IBM wouldn't return our phone calls.

Happily, Corel was able to schedule a presentation for the August meeting, where we'll learn more about their Java based application suite. @

This is a list of events scheduled by the Phoenix OS/2 Society. Unless otherwise noted, active members may attend any scheduled event for free.

Meeting notes

For the latest updates on the Society's event calendar, check the Web site at http://www.possi.org.

For meeting information and other queries, call the Phoenix OS/2 Society's voice mail at 602-949-4341.

If you have suggestions, ideas, or comments on the content of general meetings, contact the Society's Program Chair, Esther Schindler, at the general meetings or send email to esther@bitranch.com.

July

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July 1997

1 net.sig (Internet SIG); Exploring news groups. Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

1 Developer's SIG; Entering the visual age. Meeting is 6:00pm to 8:00pm. Coordinator Lyle Wilson. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

5 Magazine submission deadline for August issue. Articles should be sent to editor@possi.org. For other arrangements, call 602-585-5852.

8 HOW (How OS/2 Works) GIG. Meeting is 3:30pm to 5:30pm. Coordinators Rosey Rosenwald and Stan Kropen. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

8 General meeting; ELSA video cards. Meeting is 7:00pm to 9:00pm. Q&A session is 6:30pm to 7:00pm. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

26 Board meeting and magazine prep. Meeting is 10:00am to 1:00pm. Eat a brunch, learn about the inner workings of the Society, and help get *extended attributes* ready to mail. Location: Bill and Esther Schindler's house in north Scottsdale.

28 OS/2 Marketplace conference committee meeting. Email Rosey Rosenwald at robert@perfectniche.com for location and time.

August 1997

5 Magazine submission deadline for September issue. Articles should be sent to editor@possi.org. For other arrangements, call 602-585-5852.

5 net.sig (Internet SIG). Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

5 LAN SIG. Meeting is 6:00pm to 8:00pm. Coordinator Elliot Abramowitz. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

12 HOW (How OS/2 Works) GIG. Meeting is 3:30pm to 5:30pm. Coordinators Rosey Rosenwald and Stan Kropen. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

12 General meeting; Corel Office, Java edition. Meeting is 7:00pm to 9:00pm. Q&A session is 6:30pm to 7:00pm. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

23 Board meeting and magazine prep.

25 OS/2 Marketplace conference committee meeting. Email Rosey Rosenwald at robert@perfectniche.com for location and time.

September 1997

2 net.sig (Internet SIG). Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

2 Developer's SIG. Meeting is 6:00pm to 8:00pm. Coordinator Lyle Wilson. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

5 Magazine submission deadline for October issue. Articles should be sent to editor@possi.org. For other arrangements, call 602-585-5852.

9 HOW (How OS/2 Works) GIG. Meeting is 3:30pm to 5:30pm. Coordinators Rosey Rosenwald and Stan Kropen. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

9 General meeting; IBM PSP General Director Mike Lawrie. Meeting is 7:00pm to 9:00pm. Q&A session is 6:30pm to 7:00pm. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

27 Board meeting and magazine prep.

29 OS/2 Marketplace conference committee meeting. Email Rosey Rosenwald at robert@perfectniche.com for location and time.

October 1997

5 Magazine submission deadline for November issue. Articles should be sent to editor@possi.org. For other arrangements, call 602-585-5852.

7 net.sig (Internet SIG). Meeting is 6:00pm to 8:00pm. Coordinator Mike Briggs. Location: KDC, 2999 N 44th St, 4th floor, Phoenix.

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14 General meeting; Meeting is 7:00pm to 9:00pm. Q&A session is 6:30pm to 7:00pm. Location: Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

24 Warpstock in Los Angeles, California.

Meeting locations

General meetings are held at the Mountain Preserve Reception Center, 1431 East Dunlap, Phoenix.

From the Black Canyon, exit at Dunlap and head east. From the Squaw Peak, exit at Northern. Go west to 12th Street, turn right and go north to Dunlap, turn right, and it's two blocks up on the right.

The "How OS/2 Works General Interest Group" now meets at the Mountain Preserve Reception Center on the afternoon of the general meeting.

The Internet SIG, Developer's SIG, and LAN SIG all meet at Knowledge Development Center, 2999 N 44th St, Suite 400. That's just north of Thomas, in the building with the green dome. Plenty of free parking space is available in the garage behind the building.

If the mailing label on the back cover says "sample," then this may be the only copy of *extended attributes* that you will ever receive. If you want to keep getting the magazine (and receive all the other benefits of membership), you must join! A 12 month membership in the US is only $30. (See the form for membership pricing in other areas.) Tear out the application form, fill it in, and mail it with the membership fee to the Society's address.
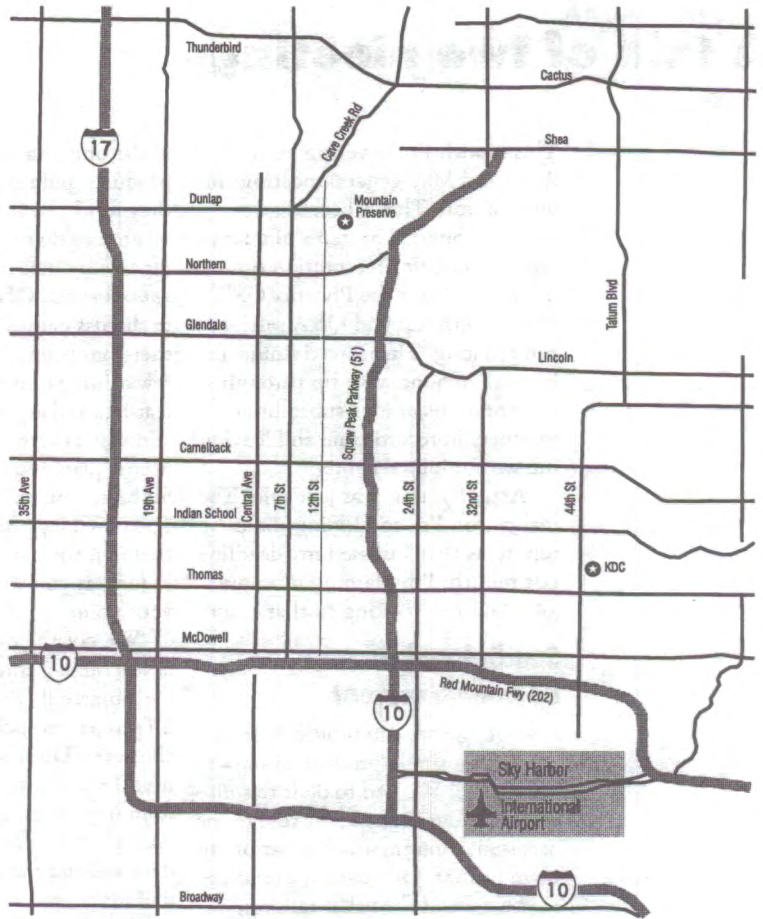
.sigs
SIG News

HOW GIG (How OS/2 Works)

by Stan Kropen, skropen@ibm.net

At the June 10 HOW GIG, Ernie Fisch demonstrated the Mesa2 spreadsheet. Ernie showed the approximately 10 attendees Mesa2's very nice "smart fill" feature, the ability to write formulas in cells and extrapolate to other rows, the use of the selection manager to set up the worksheet, sorting a date column, and the famous OS/2 right button drag and drop feature to perform a number of tasks within Mesa2. Ernie said what he liked most about Mesa2 was its OS/2 likeness. Perhaps we can examine the use of REXX to write Mesa2 macros at another session.

Developer's SIG

by Lyle Wilson, RYMD80@email.mot.com

Try IBM's Developer Domain (www.software.ibm.com/ad/devdomain/) for information on what's going on in OS/2 development.

The Developers SIG is continuing its "OS/2 development overview" series. I plan to make the SIG Internet oriented, using IRC or video conferencing software. This means you can attend the meeting from anywhere that the time zone will allow. Stay tuned!

If you know anyone who does development, tell them about the SIG. As OS/2 gets more and more Java oriented, so will the Developer SIG. This means we will have a wider range of people who may be interested.

net SIG

by Mike Briggs

At the June meeting, we finally got connected to the Internet at T-1 speed. After looking around on the web with bandwidth to burn, we got down to business and discussed the Internet Relay Chat, or IRC.

We used Gamma Tech's GTIRC and logged on to the Undernet. After an explanation of what the IRC is, we created the possi channel. Esther Schindler (in Phoenix) and Judy McDermott (a POSSI member in Detroit) logged on and helped demonstrate what can be done with the IRC. Paul Hethmon, who is the chairman of Warpstock, also stopped in. We chatted cross country and sent files over the IRC to each other. The #os/2 channels on the IRC can be a good source of information if you have a question or a problem relating to OS/2.

Next meeting we'll cover Netscape, newsgroups, and a refresher on FTP. PMINews will be released by then and might be shown to the members. See you on July 8 at 6:00pm, Knowledge Development Center.

A tale of two meetings
by Joel Frey

This month I'm covering both the April and May general meetings in one column. This is because we deprived Sundial Systems of a large portion of their presentation time in April by letting the Phoenix OS/2 Society business and Q&A sessions run too long. That forced Rollin and Randall of Sundial to rip through presentations of four substantial products in record time and leaving me with minimal content.

Actually, that was just spin. The real reason I'm combining these reports is that I missed my deadline last month. I'm blaming it on my job. And I'm sticking to that story.

Sundial makes no announcement

It's not like we could pick on someone with a single product to show. Nooooooo! We had to do it to someone with four. They really rose to the occasion, though, using a sort of tag team format. One person was at the keyboard and the other talking, fielding questions, and handing out license plate frames apparently left over from one of IBM's brilliant marketing campaigns ("Take OS/2 for a test drive"). The only way they could have covered more ground in the time available would have been to do the presentations in parallel. Can you say multitask?

The Sundial products are the Relish personal information manager, Mesa 2 spreadsheet, DBExpert database, and Clearlook word processor. All of the products except Relish were recently acquired by Sundial.

Although it would be natural to expect a set of products like this to be sold as a suite, Randall and Rollin went out of their way to point out that they were making *no announcement* about the development of a suite. While they did discuss aspects of the ongoing development of the products, pointing out ways in which they might be integrated *if* they wanted to do so, they emphasized repeatedly that they were making *no announcement*. Of course, it's difficult to discuss details of a product when there has been *no announcement*, but rewarding pointed questions about features and aspects you might want addressed (with something like license plate frames) might be a helpful hint. You could even ignore an occasional lack of enthusiasm for them on the part of some recipients as long as you were able to make your point.

We got the most complete look at the Mesa 2 spreadsheet, including its "SmartFill" feature that includes fill sequences such as the names of the Seven Dwarfs, in addition to the months of the year and other common sequences. It also has "SmartSizing" of data cells to the size of the data and drag-and-drop for colors and fonts.

We also had a good look at Relish, which they described as "the most exploitive use of drag-and-drop on the planet" and Type-to-Search, which they referred to as Relish's trademark feature.

Very good user group member prices for individual Sundial products were announced (and subsequently posted on the POSSI listserv, though they expired on May 20). One might speculate that these could eventually be upgraded to a suite at some time in the future but it's hard to say since there was *no announcement*.

PowerQuest's product lineup

In May, Gene Barlow of PowerQuest did a presentation and demo of Version 3 of Partition Magic. Gene retired from IBM as Manager of User Group Relations when "IBM decided to deemphasize OS/2."

Partition Magic, as most OS/2 users know, allows both primary and logical partitions to be moved and resized on a hard drive and enables them to be converted between FAT and HPFS. Although it was originally written for OS/2, it also supports DOS. That makes Partition Magic useful to Windows users, because it can be used to split the large hard drives common today that use the FAT file system, into smaller logical partitions, resulting in better utilization due to reduced cluster sizes. The advantage this offers over FDISK is its ability to do this and keep the data intact, in most cases.

Partition Magic was originally developed by Eric Ruff of Gazelle Systems. While he was installing OS/2, he ran out of space five diskettes from the end. He repartitioned his drive with FDISK and started over. This time he ran out of space two diskettes from the end. He completed his install on the third try. This convinced him to subsequently develop a product to move partition boundaries without reformatting the disk. He turned this development over to other programmers who completed and marketed it.

Partition Magic also makes two other products. DriveCopy is a one-time utility for copying from an older small hard disk to a large one. It requires that both drives be installed simultaneously. PowerQuest's third product is EZ Boot, which performs a function similar to OS/2 Boot Manager or V Communications' System Commander.

Hey, I actually beat the deadline this time. That's ok; you can keep the license plate frame. ◉

The latest issue of *extended attributes* came to me with some assembly errors.

This is not a complaint. You folks do a wonderful job and I'm just glad that *extended attributes* is being published. Keep up the good work. POSSI and *extended attributes* are great morale builders for us OS/2 users who seem at times to be isolated in a herd of Windows lemmings.

Arthur Menu

[The print shop occasionally has some assembly glitches. (But they make up for the glitches by giving us tremendous service.) If you happen to get a copy of the magazine with an assembly problem, please let us know and we'll send you a replacement. —Editor]
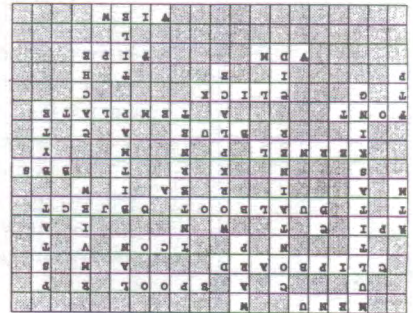
OS/2 in Houston

A letter from Carl E. Miller printed in the June 97 issue of *extended attributes* indicated there was nowhere in Houston to get OS/2 help. I beg to differ. The Houston Area League of PC Users (HAL-PC) has two OS/2 SIGs. The Developers SIG meets on the fourth Tuesday of every month. The non-developers SIG meets on the third Monday. Technically people coming to SIG meetings are supposed to be HAL-PC members but I have never seen this enforced. SIG meetings are held at HAL headquarters, 4543 Post Oak Place Drive, Suite 200. HAL's office phone number is 713-993-3300.

The SIG leader of both SIGs, Daryle Swink, has consented to help Carl during non-business hours. I spoke to Daryle and he requested that anyone in the Houston area who's interested, contact him at drswink@infohwy.com or phone number 281-922-1614.

Dell Coleman

What can I say?

by Marilyn Pizzo

Hopefully, you have had a chance to investigate VoiceType a little. Maybe you've even completed the enrollment. Once you get that far, you'll probably want to go farther—to start using VoiceType to dictate memos and to move around the desktop.

I'm certainly no exception but part of me was a little hesitant. I thought it might be a good idea to look over the tutorial to see if there was anything of interest, and if I could pick up any tips before I really got into this voice thing. We all know that the OS/2 Warp Tutorial is in the Assistance Center. Yes, you can use your mouse to do this, but let's use voice instead.

It took me a few minutes to position the microphone since it had been a couple weeks since I had a meaningful conversation with my computer.

What's on the desktop?

First, locate the Voice Manager object. I put mine in a tray on the Warp Center (I just hate cluttered desktops). When you open the Voice Manager object, two windows appear: the *Voice Manager* window and *What Can I Say* window. Both windows normally stay on top of the active windows. That is because you need them to be handy, not hidden.

What is in these windows that makes them so special? The Voice Manager window has a series of push buttons. The Mic button displays the status of the microphone: on or off. To use VoiceType, the microphone must be turned on. The Sleep button indicates that the microphone is still on, but it only responds to the words listed under the While Sleeping section in the What Can I Say window. There is also a What Can I Say button that displays that window.

The Where Can I Go button brings up a list of objects that can be opened or started by using your

voice. The Dictation window is displayed by the Dictation window button so you can use your voice to create documents. The Voice Manager Properties button displays the Properties page so you cam make changes to VoiceType. There is also a Help button.

When you start Voice Manager, the What Can I Say window is displayed. This window is blank until you turn on your microphone. Then it will list command words that are currently active. The list changes when you move within programs and around the Desktop. Also, if the What Can I Say window is minimized and you say **What-Can-I-Say** (as one word), the window reappears on the Desktop. This is definitely a neat feature.

The Where Can I Go window displays a list of objects that you can open with your voice. To do this, just say **Jump-to** and the name of the object, all as one word. When you have jumped to the Desktop object you wanted, the Where Can I Go window disappears until you need it again. After a while you will become familiar with which objects you can jump to, and you won't need to call up that window before jumping. You can add your own objects to the Where Can I Go window list by creating jump to macros using the Voice Manager's properties notebook, on the Speech page.

Navigating the desktop

At this point, you might want to go through the VoiceType Tutorial if you haven't already tried it. It doesn't take very long and you will get a feel for giving the commands. Be sure your microphone is turned on. Say the following: **Desktop, Assistance Center, Open, Open-OS/2-Warp-Tutorial, VoiceType**. You should now see the first screen of the VoiceType tutorial.

Say **Basics** to begin the first section of the tutorial. To progress through the pages, say **Forward** to move ahead and **Backward** to see the previous page. Some pages have
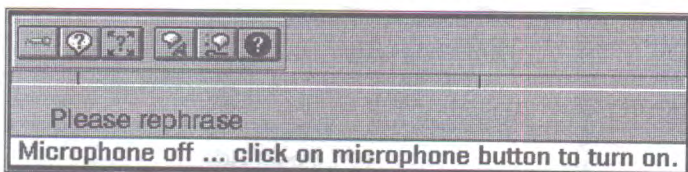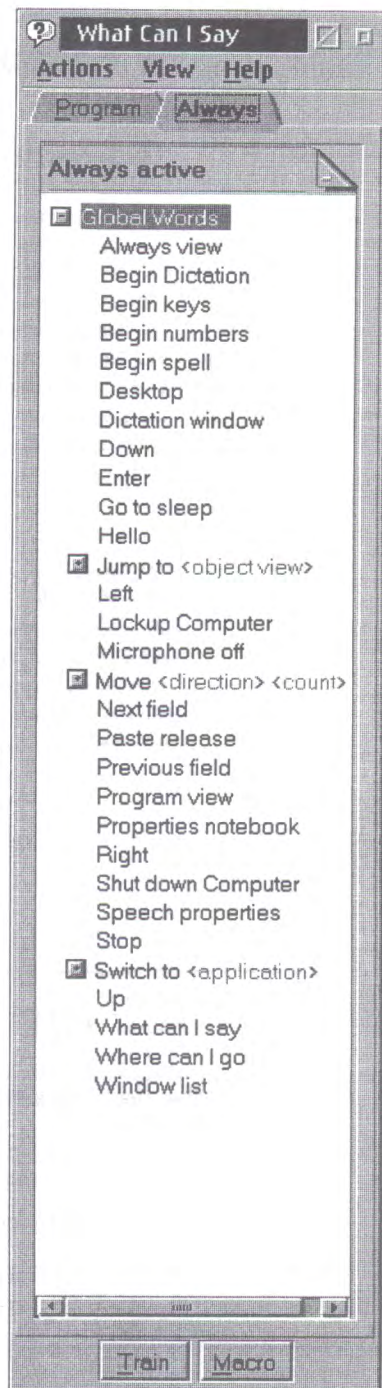
an active Practice button. Say **Practice** to try out the task they are discussing. I finally feel I have power over my computer and can make it do certain things by talking to it—and I don't have to say **please**.

Let's go over some points and tips about Navigation that we need to be aware of. With your microphone on, but before you actually begin speaking, look for a blue border called speech highlighting. This is only active if your microphone is on. The

File Manager/2

You can't manage without it.

IBM gave you the OS/2 PM Workplace Shell (WPS), an excellent object manager. But it's not very efficient for brute file management tasks.

Enter File Manager/2 (FM/2), the award-winning*, powerful, configurable and easy-to-use all-purpose file management tool for OS/2 PM. View the contents of multiple directories simultaneously, drag and drop files and directories to their destinations, use the optional toolbar or popup menus or do everything with hot keys -- the choice of interface is yours. View files with a double-click or press of the Enter key, including archive files of most types. Find files by filenames and/or text (including text in extended attributes). Sniff out and eradicate duplicate files. See where your disk space has gone on a directory-by-directory basis. Compare directory contents. And that's just scratching the surface.

See FM/2 at http://www.bmtmicro.com/fm2. You'll wonder how you ever managed without it.

* 1995 OS/2 Magazine Editor's Choice Award. 1996 OS/2 e-Zine! Reader's Choice Award, 1997 SIA nomination for Best Utility.

MSE

Barebones Software

Think your mouse should do more for you? You're right. MSE, the mouse and system enhancement utility for OS/2 PM, lets you assign commands to all mouse button/keyboard modifier commands (up to 21 in all). It also provides a clipboard manager with multiple text clipboards, screen capture, virtual desktops, standard file dialog improvement, and more.

See MSE at http://www.bmtmicro.com/mse. Make your mouse earn its keep.

blue border highlights the window that is receiving voice commands. In Navigation you do not pause between words in a multiple word command. This continuous speech is a little hard to get used to. Although there is no pause between words, you can't slur them together either. If you are reading about voice commands, multiple word commands for navigation will quite often be written with hyphens between the words such as: Jump-to-What-Can-I-Say. Whenever you want to know what the active voice commands are, call up the What Can I Say window to review the list of words available.

It's time for a little fun. It's time we gave some orders. Let's practice a little Navigation. Double-click on the VoiceType folder the Voice Manager object. Are you seeing the Voice Manager status window and the What Can I Say window? Good! Click on the microphone button to activate the microphone. Say **Open-OS/2-System**. Notice the blue border around the open OS/2 System folder. Say some of the basic movement commands: **Top**, **Bottom**, **Left**, **Right**, **Go-down**, **Stop**. Watch what happens as you give each command. Now say **Open-Productivity** then **Open OS/2-System-Editor**. VoiceType has just allowed you access to the system editor. To close the window say **Close**. Repeat the close command to close each window.

There are three ways to start a program using VoiceType. If the program is on the Desktop as an object and VoiceType recognizes the word, you may say **Desktop** then say **Open** and the name of the program you want (such as **Open-OS/2-System**).

You can also start a program in the Where Can I Go window. Say **Where Can I Go** to display that window. To start a program listed in the Where Can I Go window say **Jump-to** and the name of the program (such as **Jump-to-Command-Prompts**). You can also start a program by clicking on the program icon in the Where Can I Go window with your mouse. But that isn't the point of VoiceType now is it?

The third way to start a program through VoiceType is to use the Window List. Say **Window-List** to display a list of all the open programs. Highlight the program you want with the directional commands **Up** and **Down**. Then say **Switch-to** followed by the name of the program you want to start.

Once you have started a program what can you do within the program? You can use voice commands to make selections from the menu bar. Try this example: say **Jump-to-OS/2-system-editor**. Then say **File**, **Edit**, **Options**, or **Help**. If you know the exact command, such as **Save-as**, you can say that command immediately without saying **File** first. Don't forget to say **Close** when you are finished with a window.

You can move the cursor around in a program window and select words, lines, or blocks of text that you want to highlight with simple voice commands. I found a neat example that illustrates these commands. Let's try it. Open the OS/2 System Editor by saying **Jump-to-OS/2-System-Editor**. Manually type *The cow jumped over the moon*, three or four times. Press Enter after each sentence, except the last one. Say the following commands one at a time: **Home**, **End**, **Top**, **Bottom**. Notice where the cursor moves to, after each of the commands. Here are some more commands to try. Again, watch the cursor. **Select-word** will highlight the word the cursor is on. If the cursor is on a space, the word to the left will be highlighted. Saying **select-line** highlights the entire line where the cursor is. **Select-all** will highlight all the text in the window.

If you make a mistake and highlighted the wrong thing of just change you mind, say **Deselect** to take the highlighting off all areas.

The cursor is a pretty easy fellow to move around using voice commands. The commands are mostly self-explanatory, so they are easy to remember. Try **Next-word** or **Previous-word**. **Up** or **Down** will move the cursor a line at a time. **Left** and **Right** move the cursor a character, or space, at a time. To move the cursor more than one line or space at a time, say the appropriate command followed by the number you want, any number from one to ten. Say the command and the number separately, such as **Down** and then **Three**. If you have a page or more of text and need to move the cursor more than ten spaces or lines at a time say **Go-up**, **Go-down**, **Go-left**, **Go-right** followed by **Stop** when you get to where you want the cursor. These last commands scroll your text.

Another fun exercise is to move and size windows. Since we have been using the OS/2 System Editor window for other examples, why stop now? Open the OS/2 System Editor with voice commands. Follow the next series of commands to move the window: **Title-bar**, **Go-up**, **Stop**, **Go-down**, **Stop**, **Go-left**, **Stop**, **Go-right**, **Stop**, **Top**, **Bottom**, **Left-side**, **Right-side**, **Left**, **Up**, **Down**, **Right**. That window sure is obedient, isn't it? Size the window, using the following commands: **Top-border**, **Go-down**, **Stop**. **Right-border**, **Go-left**, **Stop**. Obviously, you can do the same commands with **Bottom-border** and **Left-border**. You can also say **Maximize** and **Restore**. Try saying **Move-window-right-5**. Neat, huh!

What we've accomplished

We covered a lot of commands that make navigating OS/2 Warp 4 very slick and easy using VoiceType. It makes you wonder how you survived without it before. Of course, this is only a portion of the capabilities of VoiceType. There is also dictation and some advanced features that make life much easier, at least while computing. 🖱

Conference czar Rosey Rosenwald and program chair Esther Schindler, surely plotting a dastardly plan (which probably includes Chinese food).

Planning the next OS/2 Marketplace

by Esther Schindler, on behalf of Robert Rosenwald

We've talked about the subject extensively at meetings, but for some reason, little mention of the OS/2 Marketplace conference made it into extended attributes. At long last, we're including a couple of pictures of the March 1997 event.

The 1997 OS/2 Marketplace was emotionally an overwhelming success, and a financial break-even. (Actually, I think we made a couple

Co-sponsor Indelible Blue's Buck Bohac discusses user interfaces with Linnea Anderson and "The David."

of hundred bucks, but when you work with a budget exceeding $30,000, that's pretty close to zero.) The participants were enthusiastic, scoring the event an overall 9.5 on a 1-to-10 scale, and the speakers were so fond of the Cosanti bells we gave them that they all asked to come back next year. Our only "failure" was needing more OS/2 software vendors in attendance, but perhaps that's to be expected; it was the first time around.

More importantly, several positive industry events have occurred as a result of the OS/2 Marketplace. They include the formation of the International OS/2 Technology Trade Association (Web site www.iotta.com), the Warpstock user fair in southern California in October (www.warpstock.org), and a general upswing in OS/2 business.

So we've decided to do it again.

OS/2 Marketplace 1998

It might be because Robert (Rosey) Rosenwald always wanted to run the

FOOD SIG (Friends Of OS/2 Dineout), but Rosey has said that he's willing to remain conference czar.

The entire cast of thousands (well, dozens) said they'll reprise their roles as well. However, I put my foot down and said that, while I'm happy to be program chair, I will not handle marketing duties again. We need a volunteer, folks. That means *you*. This is a job that could easily be done remotely, though you'll miss out on some great meals. (Rosey definitely knows every great restaurant in town.) However, if you're a long-distance user group member and willing to take on some of the duties, we'd be glad to have you; send an email to robert@ perfectniche.com.

So far, most of the conference meetings have focused on date and location. We were happy with the Holiday Inn and may return there, but we're also researching other possibilities. In particular, we could lower the hotel cost considerably for attendees by picking a time that's out of season. Last year the hotel rooms cost about $150, and the Sheraton in Mesa is telling us they can give us a $65 room rate if we move the event to June. It's hard to judge whether the tourist appeal is stronger than budget concerns.

The conference meetings are held on the last Monday of the month.

We talk business over dinner, meeting at a different restaurant each time, generally at about 6:00pm. (Don't be fooled. We also do a lot of socializing.) If you're interested in participating (or would like to keep tabs on what the conference committee is up to), let Rosey know.

WarpSpeed Computing's Chris Graham learns the real benefit of coming all the way from Australia for the conference— Kathy Zechmann's back rubs.

An attentive crowd listens to a conference presentation.

Partition Magic, version 3

by Evelyn Hitch

I recently bought a new notebook computer with a one gigabyte hard drive. The notebook came with Windows 95, which has the whole drive partitioned as C:. Since I knew that a lot of the disk space was wasted, and I wanted to install my favorite operating system, OS/2 Warp 4, on the machine, my next move—after backing up the hard disk—was to grab a copy of PowerQuest's PartitionMagic 3.

Getting started

The Welcome screen in Partition Magic's installation program strongly recommended that I exit all Windows programs before running the Setup program. Since I wasn't running any programs, I was able to continue. The next screen requested the serial number which came with the program. The next screen let me choose a location for the PQMAGIC directory. Since I only had C:, that was the obvious choice. Installation was automatic and fast.

The installation program suggested that, to make partitioning even easier, I should install UnInstaller Mover by MicroHelp. It says, "Uninstaller Mover helps you move applications from one partition to another along with all related files and operating system settings." That sounded good to me. The Setup Complete screen asked if I wanted to view the "Readme File," which recommended that I created a maintenance floppy with PartitionMagic on it.

I formatted a 1.44 MB floppy disk using the /S parameter, to create a bootable DOS disk including the system files. Then I copied PQMAG-ICT.EXE to the diskette, to make this a bootable PartionMagic disk. Since I wanted to be sure the diskette would work, I rebooted my notebook with the disk in my A: drive. Sure enough, it boots; when I typed in PQMAGICT, it brought up a DOS version of Partition Magic which worked.

Following the earlier directions, I installed "Uninstaller Mover." Again, the install went quickly, followed by the advice to read the "Read Me" file. I acquiesced to the

request. Apparently Uninstaller Mover is fully enabled to move applications from one partition, or drive, to another. The other features can only be seen in demo mode; I skipped the honor of checking them out.

Getting to work

After I rebooted my system, the Partition Magic folder appeared. I clicked on the Partition Magic icon. The next screen told me, "This program is set to run in MS-DOS mode and it wishes to close all programs." After I accepted the option, the Partition Magic screen appeared. One hard drive was displayed; when I highlighted that drive and clicked on "Info" I got information on Disk usage, Cluster Waste, Errors, Partition Info, and FAT info. What most interested me was the Cluster waste; Partition Magic reported that 18%, or 39.4 MB using the existing cluster size of 32K, was wasted space.

Perusing through the manual, I found the section describing how to run multiple operating systems. I decided to create a C drive of 401.6 MB; when the process finished, 34,603,008 bytes of disk space were recovered. I accomplished this by highlighting Drive C: and clicking on the "resize" button. Then, using the mouse, I made the disk as small as I wanted, protected by Partition Magic which kept me from going into the data portion of the drive.

Changing my mind (a woman's prerogative), I decided to decrease the drive further. I highlighted drive C: and by clicking on the arrow buttons I fine tuned the drive size to 250 MB. Once again the whole process took perhaps 30 seconds, in which time I recovered 5,193,728 bytes of disk space. When I checked the cluster waste for the C: drive, only 2% or 4.2 MB was wasted. So 98% of drive C is usable. Not bad!

Getting ready to install OS/2

My next step was to create partitions for OS/2 Warp 4, as well as programs and data. But first I wanted to create a Boot Manager partition. I clicked on the free space, then chose

Boot Manager on the menu bar, then Install Boot Manager. I was asked if I wanted to position Boot Manager at the beginning or end of the free space; I chose the beginning. It turned out that Boot Manager was installed after drive C; since I didn't like this, I decided to delete the Boot Manager. I highlighted Boot Manager on the partition bar, clicked on Options, and chose Delete. I typed in the volume label and pressed OK; that partition is history. Then I repeated the above process, this time choosing "End of free space."

I tried to get some information using the help function about a "Type 12" partition, which is at the beginning of the hard drive. When I typed in "Type 12" the system froze. Upon rebooting, Boot Manager appeared with the choice of Windows 95 intact. When the Partition Magic folder opened everything was as I so abruptly left it.

I pressed Boot Manager on the menu bar and chose "Add to Boot-Manager Menu," adding Windows 95 to the menu. Then I clicked on the free space to the right of C: and chose the "Create" button. I was given the partition type options of FAT, HPFS, NTFS, Extended, or Unformatted. I chose the Help button as the unformatted choice confused me. It turns out that Partiton Magic automatically formats partitions as it creates them, so if you wish to have an unformatted partition, select Unformatted. I chose FAT. When it came to the drive size, 250 MB sounded good. The process of creating another primary partition took a bit over a minute. This is where I wanted to put OS/2 Warp 4, with the partition hidden from Windows 95.

Technical support woes

Now it was time to make the extended partition and the smaller logical partitions. However, I ran into problems; Compaq and Windows 95 somehow would not let the drive be partitioned into two primary drives with an extended partition.

I searched the Partition Magic Web site for solutions to similar

problems but found nothing. I decided to call PowerQuest, hoping for a resolution.

First the line was continually busy. I gave up the constant dialing and tried again in the afternoon. This time, I got through but I was put on hold, listening to PowerQuest's constant advertisements for their products and the wonderful awards they have won. After twenty minutes of this annoyance, I hung up. I did leave two messages for the user group coordinator without any response. The product is good, but the company support leaves much to be desired. They get no awards from me.

Finding a workaround

Since I had such problems creating a dual primary disk, I followed the manual's instructions exactly, and deleted the hidden primary (leaving only the original). Next I created a 781 MB extended drive and format it. Then I resized the partition to 250 MB. After clicking on the free space I created another partition and formated it. Since this drive was 531 MB, I resized it to 250 MB, leaving me with the last partition of 281.5 MB. After I rebooted, I was gratified to note that all the drives were there. Windows 95 recognized them and I was ready to install OS/2 Warp 4.

I clicked on Boot Manager and using the choices there, made my F: partition bootable. OS/2 Warp 4 will be installed there, but that is another project.

Summary

In my opinion, this is an excellent product. It does exactly what it presents itself to do. The process is easy and the documentation is great, especially the second chapter, which presents three hard disk partitioning scenarios. Actually, I never got past Chapter 2 as it had step by step directions for partitioning the hard drive, which is what I used on my hard drive. It looks like there is lots of good information in the book which I plan to read in the future.

I accomplished all this on a Compaq 4120, 120 MH notebook with 16 MB of RAM.

PartitionMagic is from PowerQuest Corp., Orem, Utah.

System requirements are as follows: Windows 95, Windows 3.1, DOS 5.0 or later or OS/2 2.1 or later. Intel/386 SX compatible or higher. 8 MB RAM, 16 MB required for FAT32 or NTFS. CD-ROM drive. 3.5" diskettes available from company. 8MB hard drive space. VGA or higher video support. ◉

A Partition Magic love letter

by Michael Gannon

I have wanted Partition Magic since first I found out about it. I have "been warped" since September of 1996, and, from the beginning, I have used HPFS and Boot Manager. I also carved up my hard drive into smaller, more usable logical drives.

So why did I want Partition Magic so much? Because making any change to the current configuration with FDISK is a nightmare. Partition Magic promises to end those nightmares. And it delivers on its promise.

For instance, when I set up OS/2 Warp 4 on my D partition, I made sure to allow a little extra room for a swap file. I left about 30MB extra, over and above the operating system, and put the rest of my applications on the remaining E, F, and G drives. Great, right? Wrong!

Until I got a scanner to handle large picture input, I had no idea how large digital graphics files could be. An average 4x6 photograph, scanned in at true color resolution, can use as much as 20 MB of hard disk space. Even at 256 colors, the same photo is 8 or 9 MB. My little 30 MB swap file would max out almost every time! I'd find myself watching the drive monitor in Warp Center constantly, seeing my free space approach zero. I knew that when it did, my program would crash and I'd have to do it all again.

Enter Partition Magic.

Now, its possible to do all this without Partition Magic. (Yeah, right. And they landed men on the moon with less computer power than what I have on my desk.) But would you really want to go through this exercise without it?

Without Partition Magic, you have to:

O Delete the partition
O Format it. (You backed up everything, right?)
O Resize the logical drive to the size you really want.
O Reload all your applications, and restore all your work from those wonderful backups you made.

If you're like me, a week has gone by without getting any other work done!

Real world advice

Using Partition Magic was a breeze, but I made some mistakes that you may avoid. For instance, I installed the software on the same drive that I was trying to resize. I thought that by putting it on logical drive E, I could resize D without problem. But I didn't know that parts of OS/2 were installed on my on E drive as well. When I tried to modify the drive, Partition Magic would not allow it.

So, after a few failed attempts, I installed Partition Magic on my DOS drive (C) and was able to resize the OS/2 partitions from there.

The entire process took about an hour, and I now have nearly 80MB of free space on my D partition. No more worries about running out of space! ◉

New home and office applications

compiled by Esther Schindler

What a treasure trove, this month! We have never before needed so many pages to announce the new and updated software released in the last month.

MD+F Web Animation Kit

Modular Dreams Incorporated released MD+F Web Animation Kit (MD+F WebAK), their first SX based graphics application, as well as the most capable World Wide Web graphics program for OS/2 Warp.

MD+F WebAK is an OS/2 tool which no website administrator can be without. Features of WebAK are:

GIF animations. WebAK provides the ability to load and take apart GIF animations, construct them by simple drag-and-drop, test animations by playing them, or save them using a highly optimized algorithm for the smallest file size possible. Unlike most applications, WebAK is designed to create and work with GIF animations containing hundreds of frames.

Pattern Generation. WebAK's Pattern Generator lets you create seamless patterns for use as backgrounds or for inclusion in your animations. With additional tools such as an Image Holder to store your patterns, a variety of filters for touching-up, and an Image Tile tester, creating backgrounds for web pages has never been any easier.

Image maps. WebAK's Image map Writer lets you highlight areas on an image, specify links, and create server-side or client-side image maps, with or without HTML test code. Once you use this tool, you will never want to hand-code Image maps again.

Scripting. WebAK's easy to use scripting language simplifies the tasks needed for more complex animations, even for the most casual computer users. For more advanced users, the scripting language (actually a C++ style interpreter) provides more features such as the ability to create or destroy objects, variables, test conditions, and looping constructs. Either way, you can find dozens of interesting example scripts on Modular Dreams' Web site to get you started.

Image formats and Alpha channel. WebAK support a variety of image formats including GIF, Jpeg, and lossless Jpeg for loading images and some of the more common formats should you wish to save single images. It also supports Alpha channels for specifying transparency.

Collapse and Resurrect. By using WebAK's unique Collapse and Resurrect feature, you can store not only the end result of your work, such as a GIF animation, but also the steps that went into it. If you create something neat, don't just tell others how to do it; give them your whole environment. Everything, even images being displayed, will be neatly stored in one file!

More information about the MD+F WebAK is at the Web site at www.modulardreams.com. The Web site also contains usage information and screen shots of the product. MD+F WebAK is $69.99.

Modular Dreams Inc, PO Box 682, Vienna, VA 22183. mdf@bix.com, 703-968-6221, fax: 703-968-4339

Unify VISION with VISION/Web

Unify Corporation announced VISION with VISION/Web for OS/2 Warp. VISION is a high-end, cross-platform application development tool.

VISION/Web is the first advanced client/server development environment to generate Java code without the need for Java programming. VISION/Web helps build high-end transaction-oriented applications that run on Web and non-Web systems. (VISION/Web for OS/2 Warp clients will be available following the availability of Netscape Communicator Version 4 for OS/2 Warp.)

Unify product information is located at www.unify.com.

HACKSAW

InnoVal Systems Solutions announced HACKSAW, a new Internet tool for everyone who maintains a web site, sends email to mailing lists, or downloads files.

HACKSAW is a very useful command line tool for people who want something more than the existing FTP tools. But HACKSAW is much more. It can retrieve web pages and other web-based files using the HTTP protocol, or it can retrieve just their headers. It can send email messages to a single email address or to an entire mailing list through an SMTP server. It can retrieve, count, and/or delete any or all messages waiting for you on a POP3 mail server.

HACKSAW implements SENDALL and GETALL, which can be used to send or retrieve all the files in the specified directory. SYNCHOST and SYNCLOCAL send all the files from the one location to the other, which exist on the source but not on the target, or have a later date stamp on the source than the matching file on the target.

You can use control files to perform the same or similar FTP function on a whole list of filename specifications at once, retrieve HTTP-based files, retrieve mail from multiple POP3 accounts at once, or send mail via SMTP.

HACKSAW can perform functions during off-peak hours by means of a task scheduler or alarm program such as InnoVal's WebSched.

The OS/2 and Windows 95/NT versions are compiled from the same source code, so the two versions are identical and released concurrently. You can share one configuration file between the two versions, if you use both operating systems.

The OS/2 version comes with two REXX programs, one of which is a very configurable Spam Filter (or Twit Filter) which will delete unwanted messages from your POP3 server before your regular email program clutters your mailbox with them.

Order HACKSAW on Innoval's secure Web site at www.innoval.com. All InnoVal products come with a 30-day money back guarantee.

pmCalc

pmCalc is a PM calculator with scientific and programmer functions, calculating with variables, regression, easy transfer to/from the clipboard, detailed error messages, and English and German online help.

pmCalc recalculates the result after every keystroke. You have an entry field and a separate result field. If a formula is incomplete or erroneous, pmCalc will display a detailed error message instead of the result. You can choose between different output formats.

pmCalc also enables calulating with variables: X in the main entry-field will be replaced by the content of the X entryfield. pmCalc recalculates variables like X if the result is given. Scientific functions are supported, as well as programmers functionality: hexadecimal, octal, binary and ASCII input, and overflow simulation of integer variables. pmCalc also:

O Remembers the last 20 inputs and saves formulas.
O Calculates with double precision floating point values, so you have 15 correct digits.
O Has a Pentium bug correction; the overflow simulation works correctly even with a defective Pentium II.

Registration is $30. Available at BMT Micro.

DHGrepPM

Grep stands for "Generalized Regular Expression Processor." It is a text searching tool that was first developed for unix systems and has been ported to most operating systems.

This PM version of grep is designed as a user friendly application. It is designed for a multitasking environment; the search takes place on a separate thread to minimize the time that the wait icon is displayed. It also runs in a low priority idle mode to further reduce the search's impact on other active programs.

Grep's often cryptic command line options have been replaced with easy to use menu selections. The output of the search is sent to a PM window; the user has easy access to all of the information that was found by the program.

To reduce the overhead, results are buffered until the search is com-plete. To indicate that the search is still active, the small icon at the left of the title bar will change color as an activity indicator. The color change depends on the search results, so it does not change at a fixed rate.

Available at BMT Micro. Registration is $10.

Virtual Pascal for OS/2

fPrint (UK) Ltd has enhanced Virtual Pascal for OS/2 to include most of the language features found in Borland Delphi v2. The company has also made changes to the Delphi Visual Component Library source code, allowing programs written for Delphi under Windows to be recompiled as native 32-bit OS/2 applications. The built-in linker automatically converts the 16- or 32-bit Windows resources to OS/2 format, and no or very few changes are required to make Delphi programs run in OS/2.

A freely available archive containing the required files for all existing users of VP/2 is available on the company's FTP site.

A few comments are required, however. For implementing Delphi and VCL compatibility, the company relied on IBM's Open32/Dapie/DAX library, which emulates a subset of the Win32 API and, according to IBM, allows developers to quickly port their Windows applications to OS/2. Regretfully, the Open32 library as it currently stands (OS/2 Warp 3 with Fixpack 28) is unstable, limited in functionality, and very slow. Timing tests suggest that applications using Open32 are 5-15 times slower than their native Windows counterparts.

For this reason, fPrint suspended further development of the Delphi compatible version of Virtual Pascal for OS/2, and instead will release this archive as a downloadable upgrade to all existing users of VP/2. If you can find a use for it, at least the work was not wasted! The updated compiler, linker, and RTL allows you to recompile your Delphi programs to OS/2, where they will run as native applications. Or walk, rather.

The VCL units supported are Forms, Controls, Graphics, Menus, StdCtrls, ExtCtrls, Dialogs, FileCtrl, Grids, Tabs, Mask, Clipbrd, Printers, Outline and Buttons. The most notable missing unit is CommCtrl, which defines all the Win32-specific controls; alas, Open32 does not support any of these and probably will never do so. ("Close16" was suggested as a better name by a beta tester of the package.)

The archive, vpvcl1.zip, can be found at ftp.fprint.co.uk/fprint/vpascal. To install it, you need the VP/2 and a Borland Delphi v2 CD-ROM.

Base32 compiler for OS/2

Maxxum Consulting from New Zealand is shipping its Xbase compiler and tools for OS/2.

The Base32 demo software is at: www.maxxum.co.nz/prod01.htm

Web Organizer 2.0

ONG SoftWare is proud to announce Web Organizer for OS/2.

Web Organizer is a quick and easy tool to organize that ever growing list of bookmarks for Netscape and WebExplorer. Based on your bookmarks, and by using a full drag and drop interface, Web Organizer will let you build categorized Web Pages that will be used as your Home Page for either Netscape or WebExplorer. This will give you the fastest access to any site you want to visit.

Web Organizer is shareware and costs $19.95 to register. The unregistered version is fully functional, except for a limitation to 25 Web sites.

Here's a short excerpt of features:
O Open any Netscape Bookmark or WebExplorer INI file to access the web site entries contained within.
O Re-name, delete, and sort Netscape and WebExplorer Web sites entries.
O Show only the folder layout of the Web Pages.
O Put the Web Page's web pages and web sites in any order you want, via drag-n-drop.
O Load a Web site directly from Web Organizer, using Netscape or Web Explorer.
O Custom color scheme for the Web Pages created.
O Drag and drop web sites directly into web pages in Web Organizer from the desktop, folders, Netscape, Netscape's Bookmark Window, and WebExplorer.

Web Organizer is in several places, including ONG SoftWare's Home-

Page: www.augusta.net
/~aphillips/ong.html, Web
Organizer's Home Page:
www.augusta.net /~aphil-
lips/webxorg.html, and
www.augusta.net/~aphillips
/files/weborg.zip

SwapMon

SwapMon v3.1 is a free swapfile
monitor which allows you to see how
much of your swapfile you actually
use. It comes with its own device
driver and is extremely light on
CPU.

For more information contact
kjones@dircon.co.uk. To get the
archive visit www.users.dircon.co
.uk/~kjones.

Night Vision 2.0

Night Vision is a "planetarium" pro-
gram for OS/2, and will display the
heavens from any location on earth.
Viewing options allow you to control
which sky objects to display, which
font to use, and manipulation of var-
ious star parameters. Time may be
set to run at multiple speeds, includ-
ing backwards.

New with version 2.0, Night
Vision now prints star charts!

Night Vision has been nominated
in the "Best Home/Hobby Program"
category for the 1997 Shareware
Industry Awards! Information is at:
www.sic.org/awards97.html

Night Vision is available at BMT
Micro.

Internet Adventurer 1.0

Adventure Software has announced
the release of Internet Adventurer
version 1.0 for OS/2, OS/2's premier
Internet Suite, after almost eighteen
months in development and testing.
It contains everything you need for
using the Internet.

Following is a description of the
main features; further info can be
found at www.inetadv.net.

O Quicklist for storing URLs
O Internet Relay Chat (IRC) sup-
port, including DCC chat and file
transfer, REXX script support,
easy customization. Double click
on any URL to view it in the Web
browser.
O Internet Adventurer's Web
browser, based on IBM's Web

Explorer, can integrate with
Netscape/2.
O Tightly integrated usenet news
and Email. Multiple email
accounts and news servers are
supported, for online or offline
use. The software supports simul-
taneous message downloading in
multiple groups/servers/accounts.
Includes killfile support,
news/email filters, custom folders
for storing of messages, fill MIME
and national language support,
automatic decoding of attach-
ments. You'll also find a syntax
highlighting editor and message
viewer, support for external edi-
tors, and an address book.
O A WebWatcher utility keeps a
watch on Web pages and lets you
know when they change. When a
page changes, a WAV file can be
played, or the system can send
you an email message.
Internet Adventurer can run any
Java applet that Netscape/2 can run.
Easy access is thus provided to future
technologies.

Available at BMT Micro. Regis-
tration is $40.

Vibe (in beta)

Vibe is an application development
and deployment environment for
building real Java applications. Vibe
comprises a Java-specific integrated
development environment (IDE),
which includes a compiler, debug-
ger, an extensive set of class libraries
including superior geometry man-
agement support (Springs and
Struts), ActiveX support, and an
enriched virtual machine (VM) for
production application deployment.

Users can execute programs built
using Vibe as standalone applica-
tions or using a Visix-provided run-
time deliverable as a browser plug-
in. Vibe built applications look and
act like native applications built with
C or C++.

Vibe supports OS/2 as well as a
variety of other platforms including
AIX, Mac, Windows NT, Windows
95, and Solaris.

Developers who are interested
can download the OS/2 beta at
Vibe's website, at www.visix.com.

Connectix Virtual PC

Connectix Corporation, developer of
the award-winning, productivity-
enhancing utilities RAM Doubler
and Speed Doubler, is shipping Con-
nectix Virtual PC. The software com-
patibility product is available in two
versions, each bundled with
Microsoft Corporation's Windows
operating systems.

Why am I mentioning this in an
OS/2 column? Connectix Virtual PC
lets Power Mac users run Windows
95, Windows NT, Windows 3.x,
DOS, *IBM OS/2*, and even NeXT
OPENSTEP. This software promises
to let you run OS/2 on your Macin-
tosh.

Connectix Virtual PC is a com-
plete standards-based PC in software
using components from the Intel
Pentium MMX instruction set,
Sound Blaster Pro and S3 video, pro-
viding Power Mac users a full range
of PC software compatibility. No
additional hardware is required.

Connectix Virtual PC recognizes
existing Mac peripherals such as
Ethernet, CD-ROM, printer, and
modem as PC devices. Connectix
Virtual PC delivers to Power Mac
owners playable performance PC-
based entertainment and productiv-
ity software.

Connectix Virtual PC includes:
O Connectix Virtual PC Installer
CD-ROM and Manual
O Aladdin StuffIt Expander for Mac
OS and Windows
O Microsoft Windows 95 CD-ROM
and Manual, *or* Microsoft Win-
dows 3.11 Floppies and Manual
Connectix Virtual PC Windows 95
Version is recommended for a Power
PC-based Mac system with a Power
PC 603e (180 Mhz minimum), 604
or 604e processor (any speed). Con-
nectix Virtual PC Windows 95 Ver-
sion requires 24MB of installed
physical RAM and 150MB hard
drive space; 32MB installed physical
RAM and 300MB hard drive space
are recommended.

Connectix Virtual PC Windows
3.11/DOS Version is recommended
for a Power PC based Mac system
running at 100 Mhz or faster. Con-
nectix Virtual PC Windows
3.11/DOS Version requires 20MB of
installed physical RAM and 100MB
hard drive space; 24MB installed ⇨

physical RAM and 200MB hard drive space is recommended.

Connectix' flagship products include: RAM Doubler, Speed Doubler, Color QuickCam, and Connectix VideoPhone.

Connectix Virtual PC Windows 95 Version and Connectix Virtual PC Windows 3.11/MS-DOS Version carry an expected street price ranging from approximately $149.00 to $169.00. Both will be sold through catalog and retail outlets nationwide. For more information, contact Connectix Corporation at 415-571-5100 or at www.connectix.com.

Prominare Designer

Prominare Designer Release 5b is now available from Prominare Inc. at their Web site www.prominare.com for $179. Current owners of Prominare Designer Release 5a can upgrade to Release 5b for free.

Release 5b is a maintenance release with enhancements for IBM VisualAge C++ for Windows Open Class Library.

Prominare Designer is a programmers tool for the creation of fully featured GUI's for OS/2 and Windows NT/95. Acting as an extended resource editor, Prominare Designer supports all OS/2 controls for all versions of OS/2 including Warp Version 4.0. Its inherent flexibility enables the power of C to be fully exploited, with the added benefits of intelligent code generation.

Prominare Designer offers the best of prototyping and programming tools. Prominare Designer enables programmers to quickly create applications which conform to an individual company's:
O programming standards
O coding conventions
O selected level of CUA compliance

The linkage to the resource editor allows Prominare Designer to offer uniquely excellent facilities in the areas of custom controls, facilities which are lacking in other tools.

The programmer can use one interface to create both the resources and code for OS/2 PM and Windows NT/95 applications. The resource editor is backwardly compatible with all versions of OS/2 and Windows NT/95.

Prominare Designer speeds the process by which interfaces are completed by removing unnecessary generation phases. When the system is modified, Prominare Designer regenerates only the parts that have been modified since the last generation operation was carried out.

Prominare Designer's inherent intelligence enables the programmer to change the look and feel of the interface without having to reprogram the actions of individual controls. Whenever code is regenerated, Prominare Designer scans the existing code, if manual programming changes have been made, the changes are immediately inserted, unchanged, in the updated code.

Prominare Designer provides total flexibility in the code generated. Its code structures can be modified by the programmer to ensure that the generated code conforms with company naming conventions and coding standards—a capability that is essential for major companies developing GUIs. This also speeds the process of programming as the code generated is in a form that the programmer already understands.

Further details can be found at www.prominare.com or by sending email to designer@prominare.com.

Free email package!

InnoVal Systems Solutions announced a free edition of its best selling email client software, the Post Road Mailer. The "Free Edition" is identical, in every respect, to the commercial Pro Edition, Release 2.5. Only the software license is different. Nothing is crippled and there are no time limitations.

"We are getting ready to release a Java edition of the Post Road Mailer later this year," said Dan Porter, president of InnoVal. "We are truly excited about it and all the new and expanded functions it will include. It will be, without question, the most feature-rich, comprehensive, high performance professional email client on the market for any operating system. At the same time it will be the easiest to use. We want the entire OS/2 community to know that. Offering a free edition of our native OS/2 mailer is one way to get the word out."
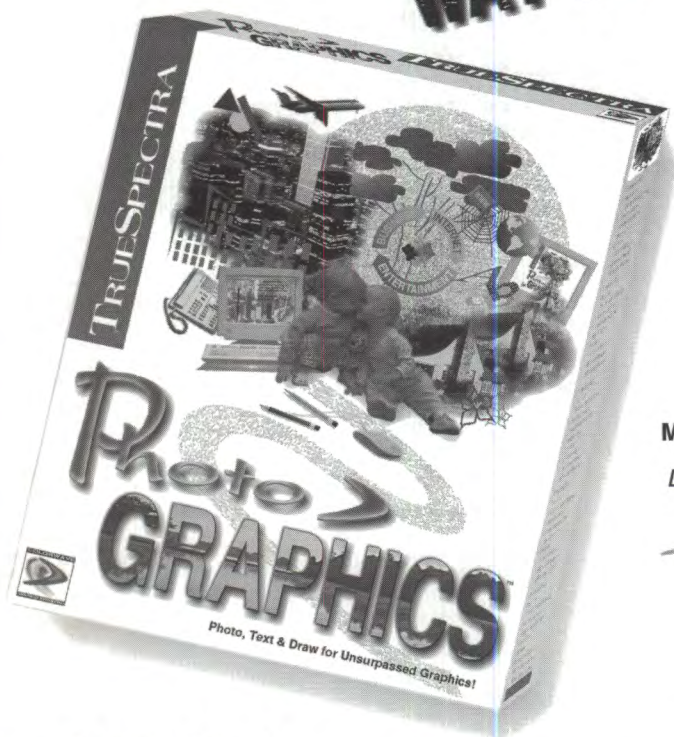
Additional details are available at www.innoval.com/free.

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The Phoenix OS/2 Society, Inc

The Phoenix OS/2 Society is a computer user group dedicated to OS/2. We have been publishing our award-winning magazine, *extended attributes* since August of 1994, and we have members all over the world.

Yes, this is a user group publication, and that sometimes shows; however, that's also an advantage, since you get real-world feedback about OS/2 and OS/2 products from other users, not just jaded, cynical journalists.

How useful will it be to join the Phoenix OS/2 Society if you aren't in Arizona? We see the Phoenix OS/2 Society as something akin to the National Geographic Society or the Smithsonian; while most members only see a magazine, you're actually a member of a society, and can participate in its activities when you happen to be in the area.

Even without activities that take place in Phoenix, Society membership includes product discounts that alone could make membership worthwhile. Taking advantage of one such discount could easily save you the entire cost of membership, giving you a "free" subscription.

Plus, the Society is prominent in the computing community. We are *already* heard by IBM; they listen to what we say. Several IBM executives get *extended attributes*. They don't get it for the "club news"—they use it to learn what OS/2 users really care about. And they respond to what they read.

You're not just getting a magazine. You're getting a voice.

If you would like to continue to receive the magazine, fill out the membership card in the center of the magazine. We would love to have your voice join ours!

Invites you to join

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OS/2
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